

## High Temperature PPU

Canceled Technology Project (2013 - 2016)



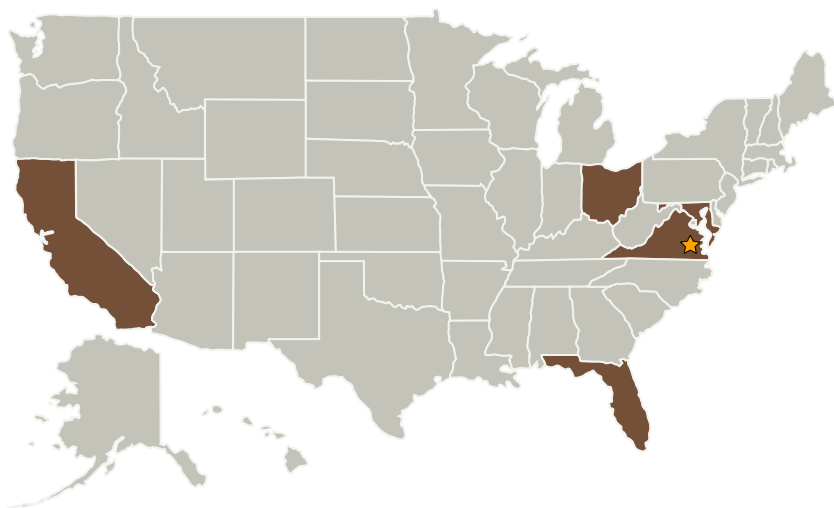
## Project Introduction

Develop, demonstrate and deliver a new technology to enable a modular and power-scalable 10-80kW electric propulsion power processing unit capable of operating at temperatures 2x state of the art. The new silicon carbide based components will lead to a 5x-10x reduction in specific mass and volume of the propulsion system per kW of spacecraft power

## Anticipated Benefits

Unfunded and Planned NASA Missions: 5-10x reduction in PPU specific mass and volume for a 300kW-class Solar Electric Propulsion mission. 80% total PPU and PPU thermal management system mass savings for a 300kW-class Solar Electric Propulsion mission. OGA: Reduction in PPU mass and volume. Reduction in space craft thermal management systems. Commercial: Reduction in PPU mass and volume. Reduction in space craft thermal management systems. Nation: Reduction in PPU mass and volume. Reduction in space craft thermal management systems.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Langley Research Center (LaRC)	Lead Organization	NASA Center	Hampton, Virginia



## High Temperature PPU

## Table of Contents

Project Introduction	1
Anticipated Benefits	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Transitions	2
Project Website:	2
Project Management	2
Technology Maturity (TRL)	2
Target Destination	2

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Langley Research Center (LaRC)

**Responsible Program:**

Game Changing Development

## High Temperature PPU

Canceled Technology Project (2013 - 2016)



## Primary U.S. Work Locations

California	Florida
Maryland	Ohio
Virginia	

## Project Transitions

**October 2013:** Project Start**April 2016:** Project canceled because other**Rationale:** Project canceled because other

## Project Website:

<https://www.nasa.gov/directorates/spacetech/home/index.html>

## Project Management

**Program Director:**

Mary J Werkheiser

**Program Manager:**

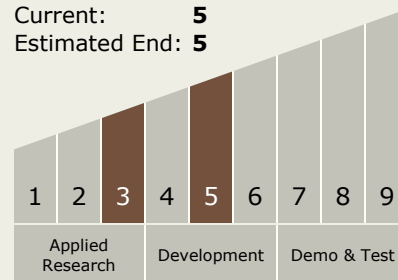
Gary F Meyering

**Principal Investigator:**

Timothy D Smith

## Technology Maturity (TRL)

Start: **3**  
Current: **5**  
Estimated End: **5**



## Target Destination

Foundational Knowledge